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Insoluble Residue of the Missouri and Virgil Series in Southwestern Iowa

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in liver than heart; muscle glycogen appears to rise above the pre-anoxic level.

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OIL DISCOVERY EXCITEMENT IN IOWA

CHARLES KEYES

Nearly a quarter of a century ago, I ventured to present a paper before this Academy in which was pointed out a number of definite geological structures that could serve as oil reservoirs, and that were the most likely belts wherein to make practical tests for natural gas and rock-oil, in this state and Missouri. At the time, and for long after, oil men were so engaged in exploration of the then new oil-fields of Oklahoma, east Texas and Louisiana that little attention could be given to new explorations elsewhere. Recently, certain oil companies have been attracted to the Iowa and Missouri fields. As one of the best informed oil engineers stated, a little while ago, the remarkable interest recently displayed concerning the possible occurence of natural gas and oil, in commercial quantities, in south-western Iowa and north-western Missouri, has resulted in one of the most active leasing campaigns ever known in the history of the oil industry. Already it is estimated that between 3,000,000 and 4,000,000 acres of land are now taken up under lease for gas and oil.

So, Iowa may soon become important as an oil and gas producer as she has with her great coal deposits during the last 50 years.

DES MOINES, IOWA.

INSOLUBLE RESIDUE OF THE MISSOURI AND VIRGIL SERIES IN SOUTHWESTERN IOWA

EDWIN H. WENBERG

The younger pennsylvanian strata of Iowa can be correlated largely on the basis of their insoluble residues. Samples were collected from exposed strata in southwestern Iowa, and adjacent parts of Missouri and Nebraska. After digestion in cold dilute muriatic acid the residues were separated by elutriation into two portions, one consisting of fragments and aggregates larger than

1/20 mm. diameter and thus suited for examination under the binoculer microscope, and the other consisting of fine silts and clays. The percentages of each portion as well as the nature of the residues were used in correlation.

Chert is the most diagnostic residue. Its color, texture, and fossil content vary with different horizons. Coals and coal smuts are relatively thin and quite persistent over long distances. Scattered through a large percentage of the sediments are varying amounts of pyrite and glauconite. However, their abundance in a single sample and their crystal or grain form may be quite diagnostic. Fine sand, black fissile shale, and red beds are common at some horizons and can be traced over wide areas. The most important fossil residues consist of siliceous, pyrite, and iron oxide sponge spicules, foraminiferal tests, glauconitic coral fragments, and internal fusulinid molds. However, these remains reoccur at different horizons, and unless used in conjunction with other criteria may lead to faulty correlations. Chalcedony concretions, often in the form of rosettes, are found in most of the limestones and are of almost no diagnostic value. Goethite and limonite frequently have replaced pyrite and may retain the cubes, spines, or oolitic forms of the pyrite.

Minor mineral constitutents not widespread enough to be of any great correlative value include almandine, fluorite, muscovite, biotite, authigenic quartz, barite, selenite, and gypsum. Among the minor fossil fragments found are silicified ostracodes, bryozoans, fusulinids, brachiopods, gastropods, crinoid stem segments and carbonaceous fragments.

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PERMIAN AMMONOIDS FROM SOUTHERNMOST MEXICO

A. K. MILLER AND W. M. FURNISH

Representatives of the ammonoid genera *Perrinites* and *Peritrochia* are described from south of Chiocomuselo, Chiapas. It is concluded that the containing beds belong in the Leonard series.

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